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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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11/21/2003

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EXAMINER

HOANG, QUOC DINH

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 10/719,419		Applicant(s) TUTTLE ET AL.	
	Examiner Quoc D Hoang		Art Unit 2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-14, 17 and 19-25 is/are rejected.
- 7) ☒ Claim(s) 4, 15, 16, 18, 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Amendment filed on 09/15/2004 has been entered and made of record as Paper No. 0904. Claims 1-25 are pending in the application.

Applicants' remarks have been considered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
3. Claims 20-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Nowhere in the specification or in any Figure shows or discloses the new limitation **"a thickness of the magnetic shield layer is tailored to a strength of an external magnetic field of an intended environment"** in claim 20, lines 4-7.

Claims 21-25 are rejected because they depend on rejected base claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 19 are rejected under 35 U.S. C. 102(e) as being anticipated by Askew (U.S. Pat 6,566,596).

Regarding claim 1, Askew teaches a method of magnetically shielding a semiconductor die, comprising: forming a molded housing 20 around the semiconductor die 12 (col. 2, lines 30-67 and Fig. 1); and applying a film of magnetic shield material 22 to at least one outer surface of the molded housing 20, the film being approximately parallel to a major surface of the semiconductor die 12 (col. 4, lines 5-57 and Fig. 2).

Regarding claim 19, Askew teaches wherein forming a unitary molded housing 20 (col. 2, lines 30-67 and Fig. 1).

6. Claim 20, as best understood, is rejected under 35 U.S. C. 102(e) as being anticipated by Askew (U.S. Pat 6,566,596).

Regarding claim 20, Askew teaches a method of packaging an integrated circuit chip 12, comprising: mounting the chip 12 on a die carrier (col. 2, lines 30-67 and Fig. 1); molding epoxy over the chip 12 to form an encapsulant 20 (col. 2, lines 30-67 and Fig. 1); and applying the selected magnetic shield layer 22 over the encapsulant 20 (col. 4, lines 5-57 and Fig. 2).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 5-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Askew (U.S. Pat 6,566,596) and in view of Featherby et al (U.S. Pat 6,455,864).

Askew teaches all the limitations of the claims except for the claimed forming a molded housing comprises encapsulating a plurality of semiconductor dies and the claimed applying magnetic shield film to both a top outer surface and a bottom outer surface of the molded housing.

Featherby teaches forming a molded housing 13 comprises encapsulating a plurality of semiconductor dies (col. 5, lines 14-20); and applying magnetic shield film 30/31 to both a top outer surface and a bottom outer surface of the molded housing 13 (col. 6, lines 30-50 and Fig. 1). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to combine multi-chip within a single package teaching of Featherby et al with K Askew's single die, because it would have reduce the cost and space of the device as taught by Featherby et al, column 5, lines 13-20.

Regarding claims 6-9, Featherby teaches the whole molded housing 13 is plastic (col. 6, lines 30-50 and Fig. 1); and bonding wires between the semiconductor die and electrical traces on the plastic substrate after the semiconductor die is attached to the plastic substrate and before forming the molded housing 13 (col. 6, lines 30-50 and Fig. 1).

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Regarding claim 10, Featherby teaches applying the film of magnetic shield material 30/31 to at least one outer surface of the molded housing 13 comprises attaching the film to the molded housing 13 with a suitable adhesive (col. 6, lines 45-50 and Fig. 1).

Regarding claim 12, Featherby teaches applying the magnetic shield material 3031 is conducted after all high temperature processing (col. 6, lines 45-50 and Fig. 1).

9. Claims 3, 11, 13-18, and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Askew (U.S. Pat 6,566,596) and in view of Hurst et al (U.S. Pat 5,939,772).

Askew does not teach a recessed region in the molded housing; and wherein the magnetic shield material is selected from the group consisting of Mu metal and permalloy.

Regarding claim 3, 17, and 21, Hurst teaches wherein the at least one outer surface of the molded housing 10 comprises a recessed region 32, into which region the film of magnetic shield material 36 is applied (col. 2, lines 1-25 and Fig. 1). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the recessed region or cavity teaching of Hurst with Askew's molded housing, because it would receive and secure the magnetic shield film as taught by Hurst, column 2, lines 10-25.

Regarding claim 11, Hurst teaches wherein the magnetic shield material 36 is selected from the group consisting of Mu metal and permalloy (col. 1, lines 20-30).

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Regarding claims 12-14 and 22-24, Hurst teaches applying the magnetic shield material 36 is conducted after all high temperature processing (col. 2, lines 1-25 and Fig. 1).

Allowable Subject Matter

10. Claims 4, 15, 16, 18, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: forming a recess including overhanging tabs such that applying the film of magnetic shield material further comprises using the overhanging tabs to mechanically retain the magnetic shield material within the recess.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quoc Hoang whose telephone number is (571) 272-1780. The examiner can normally be reached on Monday-Friday from 8.00 AM to 5.00 PM.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone numbers of the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Quoc Hoang
Patent examiner/AU 2818


David Nelms
Supervisory Patent Examiner
Technology Center 2800